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It Takes a Curriculum

Preparing Students for

FEATURED TOPIC

The Student as Scholar Model gives additional impetus to the best aspects of liberal education and provides a framework for linking curricular progression with student intellectual development

APPROACHES TO HIGHER EDUCATION have changed dramatically over the course of the past decade or so. Much of this change stems from the seminal work of Barr and Tagg (1995), whose Learning Paradigm brought coherence and energy to the study of collegiate education. At a minimum, the Learning Paradigm calls for a more open approach to student learning and an emphasis on engaging students, adopting multiple learning formats, and assessing outcomes. Three years after Barr and Tagg launched the Learning Paradigm into the mainstream of higher education, the Boyer Commission on Educating Undergraduates in the Research University took research universities to task for their neglect of undergraduates and urged a "radical reconstruction" of the approach to undergraduate education. In its 1998 report, the commission issued ten recommendations that draw directly from the research mission of research universities and build on the Learning Paradigm by emphasizing an inquiry-based freshman year.

The Boyer report offers a powerful vision of undergraduate education, but as presented and implemented, the commission's recommendations fall short in three critical ways. First, the report emphasizes research-based learning solely for research universities. Second, most universities have conceived of the undergraduate research experience only as an isolated component of a student's education, or as suitable for only some of the most advanced students. Third, both the Learning Paradigm and the research-based learning proposed by the Boyer Commission overlook the importance of student development theory for positioning research-based learning appropriately in the progression from freshman to senior year.

Technological advances have made research-based learning possible now in ways that were unimaginable in previous generations. Such learning can and, we argue, should be at the center of the undergraduate experience. In what follows, we describe an approach that combines research-based learning with student development theory to offer a more comprehensive model for organizing undergraduate education. We label

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this approach the Student as Scholar Model, where "scholar" is conceived in terms of an attitude or frame of mind derived from the best traditions of an engaged liberal education. The model operationalizes the Discovery Paradigm, in which scholarship—defined as original research and creative work—extends and transcends classroom learning.

Developing the Student as Scholar Model requires a fundamental shift in how the whole undergraduate experience is structured and imagined. It requires, at a minimum, the comprehensive adoption of the Learning Paradigm—from the first introductory course through the final capstone experience. It requires that a culture of inquiry-based learning be infused throughout the entire liberal arts curriculum, starting with the very first day of college and reinforced in every classroom and program. The Student as Scholar Model transcends the boundaries of the traditional classroom by taking advantage of the vast amount of raw material now available to undergraduates. And it draws heavily from a developmentally appropriate perspective on undergraduate education, one where the student moves from a more passive, externally motivated experience to the active, internally motivated posture of the scholar.

Technology as the enabler

The adoption of the Discovery Paradigm and the Student as Scholar Model as frameworks for education is possible now, in ways that were nearly impossible before, because both the nature of scholarship and access to the raw material of scholarship have changed so dramatically. The most obvious technological changes revolve around the development of the Internet and the concomitant increases in the amount of raw material readily available to students. Whether it is the human genome or images of rare documents, digital output from the Sloan Digital Sky project or galleries of art, vast sets of demographic data, or collections of historic maps, students today can readily access original materials that in years past were available only to the most advanced scholars who had privileged physical access to those materials. Students of only a generation or two ago learned by reading the summaries or conclusions put forward by others; they had, at best, very limited access to the raw material underpinning journal articles and books. Thus the possibilities of encouraging original student research were highly constrained, and student involvement in original research—especially research authored by them—was the exception.

With the availability of information limited and heavily filtered, the Instructional Paradigm provided a reasonable approach to education. With increases in the availability of information, and improvements in the tools used to examine that information, the Learning Paradigm, with its emphasis on inquiry-based education—even if constrained by prepared sets of data—became both more plausible and more effective. The explosion of technical capability over the past decade has dramatically changed the foundations for learning, especially the ability of students to access, process, and explore the raw material of scholarship. It is possible, really for the first time, for the motivated student to feel excited by a question posed in a class, generate new questions, and seek answers that might also turn out to be new. Perhaps most importantly, the student *believes* that this outcome is possible.

Technological change has also dramatically altered the availability of research equipment.

It is now common for sophisticated equipment, such as a DNA synthesizer, to be available in advanced undergraduate courses, or for undergraduates to have access to such equipment as part of a research team. Through the use of this sophisticated equipment in controlled environments, students gain the knowledge of how to use cutting-edge devices and, even more importantly, how to imagine questions that require their use. Technology enables a sophisticated and successful adaptation of the Discovery Paradigm and the Student as Scholar Model by making it possible for students to create new knowledge and to collaborate and communicate effectively with peers.

The student as scholar

Many of the attributes of a scholar are similar to those of a learner, most notably accepting personal responsibility for learning, engaging in inquiry-driven study, and thinking critically from multiple perspectives. Others focus on elements of how to conduct scholarship, such as the ability to employ appropriate methodologies. Several attributes, however, focus on the core aspects of the "frame of mind" critical to the student as scholar, including internal motivation, a belief in one's capacity to do original research or creative practice, reliance on personal authority, and the self-perception of being a peer in the larger community of scholars. All of these attributes are critical to the success of the Student as Scholar Model, and they provide a frame through which specific goals for a curriculum, an individual course, or cocurricular activities can be established. In the broadest sense, the Student as Scholar Model provides an integrating vision of student success and development.

Set in the context of the emerging Discovery Paradigm, the Student as Scholar Model extends the Learning Paradigm in three significant ways. First, it obliterates the boundaries of a traditional course, infusing in students the sense that the course is a platform from which they launch their search for understanding, and that it does not define limits on their learning and discovery. Second, it emphasizes the integration of learning across both the curricular and cocurricular environments. Third, and perhaps most essentially, it instills in students the belief that they can be authors of new knowledge. Thus the Student as Scholar Model gives additional impetus to the best aspects of liberal education and provides a framework for linking curricular progression with student intellectual development.

Liberal education

In recent years there has been a resurgence of interest in liberal education, including the launch of the Liberal Education and America's Promise (LEAP) initiative by the Association of American Colleges and Universities (2007). LEAP argues convincingly for the relevance of liberal education to modern society. Whether or not a student majors in a liberal arts discipline, the skills, perspectives, and self-identity that come from a liberal education are foundational to all advanced education. We build on LEAP by arguing that the Student as Scholar Model both draws on and adds to the impact of liberal education on durable and long-term student learning. A truly extraordinary student experience with superior learning outcomes can be created by combining key aspects of the Learning Paradigm—for example, establishing goals, assessing outcomes, and making learning an active process—and the philosophical

foundations of liberal education through the mental frame of the student as scholar set within the Discovery Paradigm.

The complementarities between liberal education and the Student as Scholar Model are remarkable. Almost all discussions of liberal education focus on critical thinking and reasoning. It is difficult to imagine skills more central to the Student as Scholar Model, with its emphasis on developing the capacity to pose and pursue important questions. Similarly, the vastly increased access to raw material brought about by technological improvements brings opportunity and challenge that fit beautifully within the liberal education framework. Developing skills to find, critically evaluate, analyze, and synthesize information are foundational to both liberal education and the Student as Scholar Model.

Ultimately, the capacity to undertake original research rests not only on the skills achieved, but also, and most emphatically, on the extent to which the student understands his or her own capacity to author original material

But perhaps most interesting of all is the need to understand the role of personal development. Ultimately, the capacity to undertake original research rests not only on the skills achieved, but also, and most emphatically, on the extent to which the student understands his or her own capacity to author original material. Here again, the linkages between the Student as Scholar Model and liberal education are exceptionally strong. One of the most enduring goals of liberal education is to create "the educated person." The Student as Scholar Model provides an organizing framework precisely designed to achieve this important goal.

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Using developmental theory to shape the curriculum

An understanding of the personal and intellectual development of (especially) traditional college-age students is critical to the successful adoption of the Student as Scholar Model. Specifically, an understanding of models of student development should be used purposefully to create developmentally appropriate curricular and cocurricular activities that build student capability *progressively* throughout the college years.

In Kegan's (1994) personal development framework, individuals move from the first to the fifth order of consciousness over their lifetimes—developing along the way internal foundations that help them make meaning of the world. College students typically make meaning from the second or third order of consciousness within the prototypical time frame of the traditional four-year higher education experience, although the (usually unachieved) goal is to achieve the fourth order of consciousness (Love and Guthrie 1999).

In the second order of consciousness, students have developed durable categories but view the world through an instrumentalist self-absorption lens; that is, they look at how the world serves their needs. In the third order of consciousness, students can intrinsically value others' perspectives; however, they have a strong reliance on external authorities in forming their values and personal identities. In the fourth order of consciousness, students develop a reliance on their own internal authority. The Student as Scholar Model focuses on students progressing from their reliance on external authority in the third order of consciousness to an internal authority in the fourth order. The Instructional Paradigm, in which students passively receive knowledge, upholds students' development in the third order of consciousness. The Learning Paradigm supports students in their developmental crossroad between the third and fourth order, while the Discovery Paradigm challenges students to author knowledge and utilize their developing internal foundation in the fourth order.

The challenge for higher education, Kegan explains, is consciously to build an evolutionary bridge that "fosters developmental transformation" leading from the third to fourth orders of self-consciousness. Kegan urges educators to "fashion a bridge that is more respectfully

K. Patricia Cross Future Leaders Awards

The K. Patricia Cross Future Leaders Awards recognize graduate students who show exemplary promise as future leaders of higher education; who demonstrate a commitment to developing academic and civic responsibility in themselves and others; and whose work reflects a strong emphasis on teaching and learning. The awards are sponsored by K. Patricia Cross, professor emerita of higher education at the University of California-Berkeley, and administered by the Association of American Colleges and Universities. Following are the recipients of the 2008 awards:

Thomas Eatmon Jr., public policy, Southern University

Andrew Farke, vertebrate anatomy/paleontology, Stony Brook University

Kyle Gobrogge, neuroscience, Florida State University

Frances Gratacos, molecular biology, University of Medicine and Dentistry of New Jersey/Rutgers

Jennifer Lavy, theatre history and criticism, University of Washington

Christine Reiser, anthropology, Brown University

Paul Rogers, education, University of California, Santa Barbara

Cindy Spurlock, communication studies, University of North Carolina

Kimberly Van Orman, philosophy, University at Albany, SUNY

Dumaine Williams, pharmacology, Stony Brook University

Nominations for the 2009 awards are due October 6, 2008. (For more information, see www.aacu.org.) The recipients will be introduced at the 2009 annual meeting, where they will deliver a presentation on "Faculty of the Future: Voices of the Next Generation."

Recipients of the 2008 awards

anchored on both sides of the chasm, instead of assuming that such a bridge already exists and wondering why the other has not long ago walked over it" (1994, 332–33). It is important for us to understand the level of support students need while they are "in over their heads" with challenging and transformative educational experiences.

One effective approach to Kegan's evolutionary bridge is the Learning Partnerships Model that emerged from Baxter Magolda's (2004a) longitudinal study of college students.

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The model supports students in learning to construct knowledge and challenges them to achieve self-authorship during college. From a developmental perspective, learning involves actively making sense of one's experiences (King and Baxter Magolda 1996). This sense-making and concomitant knowledge construction helps students grow their own personal identities *and* academic capabilities. The opportunity for students to author their own educational experiences is critical to the development of the Student as Scholar Model. Indeed, Baxter Magolda advocates for self-authorship as a central goal of higher education. She explains how possessing an internal foundation—that is, a foundation based on internal rather than external motivation and authority—"yields the capacity to actively listen to multiple perspectives, critically interpret those perspectives in light of relevant evidence and the internal foundation, and make judgments accordingly" (2004b, xxii).

Designing a curriculum becomes a two-dimensional problem in which both the complexity of the material and students' developmental capacities are considered

In the Student as Scholar Model, educators must let go of their power of authority in traditional educational practices and empower students to see themselves as authorities and creators of knowledge. Rather than imposing the educator's internal authority on the educational curriculum inside and outside of the classroom, we should more consciously support the development of students' internal foundations. The Student as Scholar Model, with its emphasis on developing the habits of mind and the skills of the scholar, can be used purposefully to build those internal foundations by employing developmentally appropriate, research-based learning across the curriculum.

Most faculty and staff tend to view the distinction between lower-level and upper-level courses primarily as a matter of complexity—more skill and experience are required for advanced courses than for beginning courses—without actively considering, or even recognizing, students' developmental capacities. As a result, "what teachers expect students to understand might be different from what they are, in fact, capable of understanding," and thus "our job as instructors is both to gain a 'reading' of where our students are and then to reach out to them in a way that helps them move beyond where they are to where they want to be" (Tinberg and Weisberg 1998, 46). With this approach, designing a curriculum becomes a two-dimensional problem in which both the complexity of the material and students' developmental capacities are considered. The goal is to integrate personal and intellectual development with student learning in one seamless educational experience through immersion in a developmentally appropriate, research-based curriculum that leads students across Kegan's evolutionary bridge.

The developmental bridge

To be truly successful, the Student as Scholar Model should apply to the entire undergraduate experience and take into account the development of students. Foundational courses anchor one end of the "developmental bridge." At the beginning level, students have a limited vision of themselves as legitimate authors of new knowledge and rely on external authority for discipline and guidance. They tend to look at knowledge in absolutist terms, and are learning to understand multiple perspectives. Educators can fail to provide support "by neglecting to build a bridge out of and beyond the old world and by expecting individuals to take up immediate residence in the new world" (Love and Guthrie 1999, 75). The foundational courses should thus begin with understanding students' current developmental capabilities, especially the need to balance discipline and inquiry.

Once students have successfully completed their foundational courses, they should find themselves in the middle of the bridge (although research suggests that many will not yet be there). At this point in their undergraduate careers, students are engaging in intermediate-level experiences—experiences that take them "beyond the book" and challenge

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them to continue their development as scholars. These students are active participants in their learning. They find themselves involved in opportunities that demonstrate how to work collaboratively with others and enable them to feel a part of a larger community of scholars—they can look to their peers for help and support. They are more intrinsically motivated since they better understand their capabilities for authoring their own knowledge. Through these intermediate experiences, students develop the capacities necessary to judge new information based on their own personal values; they spend less time looking to external authorities for answers—and they recognize that absolute answers may not exit at all. Students are more likely to develop scholarly work by using original material, and they have a better understanding of how they can integrate their learning within and across disciplines. The Student as Scholar Model challenges the intermediate student to take on more sophisticated tasks, yet continues to recognize the developmental limitations that, though diminished, still affect the effectiveness of different pedagogical strategies.

At the far end of the bridge, advanced students have the opportunity to create their own research questions and develop their own methodologies, believing that their goal is to

provide original contributions. They understand that motivation and authority come from within. They see themselves as peers in the larger research community. And, of course, they are more skilled in research. The capstone experience provides the highest level of freedom and challenge. Students extend their learning in a particular area of focus, critique existing knowledge, apply learning across disciplines, and, hopefully, discover new knowledge. Capstone experiences like this, Project DEEP (Documenting Effective Educational Practice) (2005, 188) found, "contribute to the high levels of academic challenge." If properly prepared, students are now at the far end of the developmental bridge, at the fourth order of consciousness, and they no longer need as much outside support or discipline as they did in foundational or intermediate courses.

The Student as Scholar Model provides a sharper image of what it means to be an "educated person"

Conclusion

The Student as Scholar Model has the potential to improve dramatically the impact of American colleges and universities. First and foremost, it can provide better-educated undergraduates, students who have the skills needed to deal with a fluid world. These students will also have the confidence, as well as the ability, to perform at a much higher level immediately upon graduation—and, thus, be well positioned as lifelong learners. Second, by merging developmental understanding with liberal education in the context of the Discovery Paradigm, the Student as Scholar Model provides a framework that colleges and universities can use to set goals across the entire curriculum. Third, it offers a powerful path to reducing the boundaries that separate the core higher education missions of teaching, research, and service. And the "fusion of learning" brought about by the Student as Scholar Model does not just reduce the boundaries, it actively reaches across them to draw energy for building the attitudes and competencies required to be a successful scholar.

The Student as Scholar Model also poses many significant challenges, including most directly the challenge of constructing a curriculum that embraces the model. Most faculty have little training in pedagogy, let alone student development theory. And yet, the successful adoption of the Student as Scholar

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Model requires a deep understanding of the bridge needed to move students from the third to the fourth order of consciousness. Additionally, moving first to the Learning Paradigm and then to the Discovery Paradigm requires faculty to take on a new and different role in the classroom. Instead of holding the power, they are now empowering students to take control of their own education and to author knowledge as well. This requires difficult self-assessment of how faculty view themselves and their relationships with students. The "developmental bridge" also requires a better melding of the curricular and the cocurricular. Students learn, learn how to learn, and develop the confidence to learn and discover on their own through the full range of college activities. Thus we need more purposively to develop and link cocurricular activities to the ultimate goal of the student as scholar.

Finally, as we work hard to spread an appreciation of the power of liberal education to the broader public, we need to see the Student as Scholar Model as providing a motivating clarity to those values of liberal education that we hold most dear. The Student as Scholar Model provides a sharper image of what it means to be an "educated person." While it may not provide all of the breadth that many would associate with this label, it does energize and coalesce many of the most essential elements of liberal education.

This is an exciting time in higher education. We have unprecedented opportunities to engage our students in their learning in new ways. We know more about how students develop, what enduring skills are most critical, what motivates students, and how to provide students with virtually unlimited access to original raw material that they can explore with "attitude." It is this attitude, this frame of mind, that can fundamentally change how students think about their education. This attitude can lead to deeper, better motivated, and more enduring learning not only during the years of formal study, but also throughout a lifetime of informal and formal learning and discovery in an ever-changing world. □

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